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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,288	04/04/2002	Frank Kowalewski	10191/2062	5733

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KENYON & KENYON LLP  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER
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PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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07/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/009,288

Applicant(s)

KOWALEWSKI, FRANK

Examiner

Sudhanshu C. Pathak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on April 23<sup>rd</sup>, 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-19 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 18-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on April 4<sup>th</sup>, 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-to-12 have been canceled (as per preliminary amendment April 4<sup>th</sup>, 2002).
2. Claims 13-to-24 are pending in the application.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 13-14 & 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Labedz et al. (5,251,233).

In regards to Claims 13 & 24, Labedz discloses a method for estimating a memory-enabled transmission channel (Fig. 4), comprising the steps of: determining a first estimation of a pulse response of the memory-enabled transmission channel (Fig. 4, element 400); performing an estimation of an additive interference of the memory-enabled transmission channel (Column 4, lines 5-24); and performing a correction of the first estimation of the pulse response while taking into consideration the estimation of the additive interference of the memory-enabled transmission channel (Column 4, lines 65-68 & Fig. 4, element 400, 420) {Interpretation: The reference discloses a feedback to the matched filter taps which performs the function of correction}.

In regards to Claim 14, Labedz discloses a method for estimating a memory-enabled transmission channel as described above. Labedz further discloses the step of determining the first estimation is performed by a matched filter (Fig. 4, element 400).

5. Claims 15-17 & 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labedz et al. (5,251,233) in view of Steiner et al. (Low Cost Channel Estimate in the Uplink Receiver of CDMA Mobile Radio Systems; Berlin, Germany; Vol. 47, No. 11/12; Nov. 1, 1993; Page 292-298).

Regarding to Claim 15, a method according to Claim 14, wherein the matched filter is given by (the equations as described in the Claim). Labedz discloses all the limitations regarding the method for estimating a transmission channel using a matched filter as described above. However, Labedz does not disclose the matched filter is given by (the equations as described in the Claim).

Steiner discloses the equations as described in the claim (Page 293, left-column, Eq.'s 3a-b & Page 293, right-column, Eq.'s 13-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Steiner teaches the equations as described in the claim so as to mathematically describe the channel estimate implemented using a matched filter.

Regarding to Claims 16-17, a method according to Claim 13, wherein the first estimation is given by a least squares estimation. Labedz discloses all the limitations regarding the method for estimating a transmission channel as described above. However, the Labedz does not disclose the first estimation is given by least

squares estimation and more specifically (the equations as described in the Claim 17).

Steiner discloses determining the channel estimate using the least squares algorithm (Equation 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Steiner teaches implementing a channel estimate using the least squares estimate and this can be implemented in the method as described in the AAPA so as to provide a computationally cheaper algorithm and an unbiased estimate.

Regarding to Claims 22-23, a method according to Claim 13 wherein: the correction of the first estimation is given by a MMSE algorithm. Labeledz discloses all the limitations regarding the method for estimating a transmission channel as described above. However, the Labeledz does not disclose the correction of the first estimation is given by a MMSE algorithm.

Steiner discloses determining the channel estimate using the minimum mean square error (MMSE) algorithm (Equation 10-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Steiner teaches the equations as described in the claim so as to mathematically describe the channel estimate implemented using a MMSE algorithm.

6. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Labeledz et al. (5,251,233) in view of Applicant Admitted Prior Art (AAPA).

Regarding to Claim 21, a method according to Claim 13 wherein: the correction of the first estimation is given by a POCS algorithm. Labeledz discloses all the

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limitations regarding the method for estimating a transmission channel as described above. However, the Labeledz does not disclose the correction of the first estimation is given by a POCS algorithm.

The AAPA discloses the correction of the first estimation is given by a POCS algorithm (Substitute Specification, Page 1, Background Information, lines 19-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA discloses a POCS algorithm for the correction of the estimation coefficients and this can be implemented in the method as described in Labeledz so as to provide a more accurate estimate of the channel estimate.

***Allowable Subject Matter***

7. Claims 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

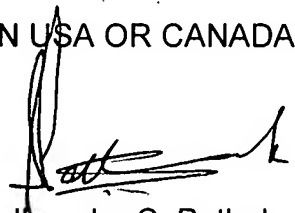
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sudhanshu C. Pathak  
Examiner  
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